Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

Mouse Dnmt3a DNA sequence

1 GAATTCCGGC CTGCTGCCGG GCCGCCCGAC CCGCCGGGCC ACACGGCAGA

51 GCCGCCTGAA GCCCAGCGCT GAGGCTGCAC TTTTCCGAGG GCTTGACATC

101 AGGGTCTATG TTTAAGTCTT AGCTCTTGCT TACAAAGACC ACGGCAATTC

151 CTTCTCTGAA GCCCTCGCAG CCCCACAGCG CCCTCGCAGC CCCAGCCTGC

201 CGCCTACTGC CCAGCAATGC CCTCCAGCGG CCCCGGGGAC ACCAGCAGCT

251 CCTCTCTGGA GCGGGAGGAT GATCGAAAGG AAGGAGAGGA ACAGGAGGAG

301 AACCGTGGCA AGGAAGAGCG CCAGGAGCCC AGCGCCACGG CCCGGAAGGT

351 GGGGAGGCCT GGCCGGAAGC GCAAGCACCC ACCGGTGGAA AGCAGTGACA

401 CCCCCAAGGA CCCAGCAGTG ACCACCAAGT CTCAGCCCAT GGCCCAGGAC

451 TCTGGCCCCT CAGATCTGCT ACCCAATGGA GACTTGGAGA AGCGGAGTGA

501 ACCCCAACCT GAGGAGGGGA GCCCAGCTGC AGGGCAGAAG GGTGGGGCCC

551 CAGCTGAAGG AGAGGGAACT GAGACCCCAC CAGAAGCCTC CAGAGCTGTG

601 GAGAATGGCT GCTGTGTGAC CAAGGAAGGC CGTGGAGCCT CTGCAGGAGA

651 GGGCAAAGAA CAGAAGCAGA CCAACATCGA ATCCATGAAA ATGGAGGGCT

701 CCCGGGGCCG ACTGCGAGGT GGCTTGGGCT GGGAGTCCAG CCTCCGTCAG

751 CGACCCATGC CAAGACTCAC CTTCCAGGCA GGGGACCCCT ACTACATCAG

801 CAAACGGAAA CGGGATGAGT GGCTGGCACG TTGGAAAAGG GAGGCTGAGA

851 AGAAAGCCAA GGTAATTGCA GTAATGAATG CTGTGGAAGA GAACCAGGCC

901 TCTGGAGAGT CTCAGAAGGT GGAGGAGGCC AGCCCTCCTG CTGTGCAGCA

951 GCCCACGGAC CCTGCTTCTC CGACTGTGGC CACCACCCCT GAGCCAGTAG

1001 GAGGGGATGC TGGGGACAAG AATGCTACCA AAGCAGCCGA CGATGAGCCT

1051 GAGTATGAGG ATGGCCGGGG CTTTGGCATT GGAGAGCTGG TGTGGGGGAA

1101 ACTTCGGGGC TTCTCCTGGT GGCCAGGCCG AATTGTGTCT TGGTGGATGA

FIG. 1A-1

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1151 CAGGCCGGAG CCGAGCAGCT GAAGGCACTC GCTGGGTCAT GTGGTTCGGA

1201 GATGGCAAGT TCTCAGTGGT GTGTGTGGAG AAGCTCATGC CGCTGAGCTC

1251 CTTCTGCAGT GCATTCCACC AGGCCACCTA CAACAAGCAG CCCATGTACC

1301 GCAAAGCCAT CTACGAAGTC CTCCAGGTGG CCAGCAGCCG TGCCGGGAAG

1351 CTGTTTCCAG CTTGCCATGA CAGTGATGAA AGTGACAGTG GCAAGGCTGT

1401 GGAAGTGCAG AACAAGCAGA TGATTGAATG GGCCCTCGGT GGCTTCCAGC

1451 CCTCGGGTCC TAAGGGCCTG GAGCCACCAG AAGAAGAGAA GAATCCTTAC

1501 AAGGAAGTTT ACACCGACAT GTGGGTGGAG CCTGAAGCAG CTGCTTACGC

1551 CCCACCCCCA CCAGCCAAGA AACCCAGAAA GAGCACAACA GAGAAACCTA

1601 AGGTCAAGGA GATCATTGAT GAGCGCACAA GGGAGCGGCT GGTGTATGAG

1651 GTGCGCCAGA AGTGCAGAAA CATCGAGGAC ATTTGTATCT CATGTGGGAG

1701 CCTCAATGTC ACCCTGGAGC ACCCACTCTT CATTGGAGGC ATGTGCCAGA

1751 ACTGTAAGAA CTGCTTCTTG GAGTGTGCTT ACCAGTATGA CGACGATGGG

1801 TACCAGTCCT ATTGCACCAT CTGCTGTGGG GGGCGTGAAG TGCTCATGTG

1851 TGGGAACAAC AACTGCTGCA GGTGCTTTTG TGTCGAGTGT GTGGATCTCT

1901 TGGTGGGGCC AGGAGCTGCT CAGGCAGCCA TTAAGGAAGA CCCCTGGAAC

1951 TGCTACATGT GCGGGCATAA GGGCACCTAT GGGCTGCTGC GAAGACGGGA

2001 AGACTGGCCT TCTCGACTCC AGATGTTCTT TGCCAATAAC CATGACCAGG

2051 AATTTGACCC CCCAAAGGTT TACCCACCTG TGCCAGCTGA GAAGAGGAAG

2101 CCCATCCGCG TGCTGTCTCT CTTTGATGGG ATTGCTACAG GGCTCCTGGT

2151 GCTGAAGGAC CTGGGCATCC AAGTGGACCG CTACATTGCC TCCGAGGTGT

2201 GTGAGGACTC CATCACGGTG GGCATGGTGC GGCACCAGGG AAAGATCATG

2251 TACGTCGGGG ACGTCCGCAG CGTCACACAG AAGCATATCC AGGAGTGGGG

2301 CCCATTCGAC CTGGTGATTG GAGGCAGTCC CTGCAATGAC CTCTCCATTG

FIG. 1A-2

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Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

2351 TCAACCCTGC CCGCAAGGGA CTTTATGAGG GTACTGGCCG CCTCTTCTTT

2401 GAGTTCTACC GCCTCCTGCA TGATGCGCGG CCCAAGGAGG GAGATGATCG

2451 CCCCTTCTTC TGGCTCTTTG AGAATGTGGT GGCCATGGGC GTTAGTGACA

2501 AGAGGGACAT CTCGCGATTT CTTGAGTCTA ACCCCGTGAT GATTGACGCC

2551 AAAGAAGTGT CTGCTGCACA CAGGGCCCGT TACTTCTGGG GTAACCTTCC

2601 TGGCATGAAC AGGCCTTTGG CATCCACTGT GAATGATAAG CTGGAGCTGC

2651 AAGAGTGTCT GGAGCACGGC AGAATAGCCA AGTTCAGCAA AGTGAGGACC

2701 ATTACCACCA GGTCAAACTC TATAAAGCAG GGCAAAGACC AGCATTTCCC

2751 CGTCTTCATG AACGAGAAGG AGGACATCCT GTGGTGCACT GAAATGGAAA

2801 GGGTGTTTGG CTTCCCCGTC CACTACACAG ACGTCTCCAA CATGAGCCGC

2851 TTGGCGAGGC AGAGACTGCT GGGCCGATCG TGGAGCGTGC CGGTCATCCG

2901 CCACCTCTTC GCTCCGCTGA AGGAATATTT TGCTTGTGTG TAAGGGACAT

2951 GGGGGCAAAC TGAAGTAGTG ATGATAAAAA AGTTAAACAA ACAAACAAAC

3001 AAAAAACAAA ACAAAACAAT AAAACACCAA GAACGAGAGG ACGGAGAAAA

3051 GTTCAGCACC CAGAAGAGAA AAAGGAATTT AAAGCAAACC ACAGAGGAGG

3101 AAAACGCCGG AGGGCTTGGC CTTGCAAAAG GGTTGGACAT CATCTCCTGA

3151 GTTTTCAATG TTAACCTTCA GTCCTATCTA AAAAGCAAAA TAGGCCCCTC

3201 CCCTTCTTCC CCTCCGGTCC TAGGAGGCGA ACTTTTTGTT TTCTACTCTT

3251 TTTCAGAGGG GTTTTCTGTT TGTTTGGGTT TTTGTTTCTT GCTGTGACTG

3301 AAACAAGAGA GTTATTGCAG CAAAATCAGT AACAACAAAA AGTAGAAATG

3351 CCTTGGAGAG GAAAGGGAGA GAGGGAAAAT TCTATAAAAA CTTAAAATAT

3401 TGGTTTTTTT TTTTTTTCCT TTTCTATATA TCTCTTTGGT TGTCTCTAGC

3451 CTGATCAGAT AGGAGCACAA ACAGGAAGAG AATAGAGACC CTCGGAGGCA

3501 GAGTCTCCTC TCCCACCCCC CGAGCAGTCT CAACAGCACC ATTCCTGGTC

FIG. 1A-3

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Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

3551 ATGCAAAACA GAACCCAACT AGCAGCAGGG CGCTGAGAGA ACACCACACC

3601 AGACACTTTC TACAGTATTT CAGGTGCCTA CCACACAGGA AACCTTGAAG

3651 AAAACCAGTT TCTAGAAGCC GCTGTTACCT CTTGTTTACA GTTTATATAT

3701 ATATGATAGA TATGAGATAT ATATATATAA AAGGTACTGT TAACTACTGT

3751 ACATCCCGAC TTCATAATGG TGCTTTCAAA ACAGCGAGAT GAGCAAAGAC

3801 ATCAGCTTCC GCCTGGCCCT CTGTGCAAAG GGTTTCAGCC CAGGATGGGG

3851 AGAGGGGAGC AGCTGGAGGG GGTTTTAACA AACTGAAGGA TGACCCATAT

3901 CACCCCCCAC CCCTGCCCCA TGCCTAGCTT CACCTGCCAA AAAGGGGCTC

3951 AGCTGAGGTG GTCGGACCCT GGGGAAGCTG AGTGTGGAAT TTATCCAGAC

4001 TCGCGTGCAA TAACCTTAGA ATATGAATCT AAAATGACTG CCTCAGAAAA

4051 ATGGCTTGAG AAAACATTGT CCCTGATTTT GAATTCGTCA GCCACGTTGA

4101 AGGCCCCTTG TGGGATCAGA AATATTCCAG AGTGAGGGAA AGTGACCCGC

4151 CATTAACCCC NCCTGGAGCA AATAAAAAAA CATACAAAAT GT

FIG. 1A–4

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

Mouse Dnmt3b1 DNA Sequence

```
   1 GAATTCCGGG CGCCGGGGTT AAGCGGCCCA AGTAAACGTA GCGCAGCGAT
  51 CGGCGCCCGA GATTCGCGAA CCCGACACTC CGCGCCGCCC GCCGGCCAGG
 101 ACCCGCGGCG CGATCGCGGC GCCGCGCTAC AGCCAGCCTC ACGACAGGCC
 151 CGCTGAGGCT TGTGCCAGAC CTTGGAAACC TCAGGTATAT ACCTTTCCAG
 201 ACGCGGGATC TCCCCTCCCC CATCCATAGT GCCTTGGGAC CAAATCCAGG
 251 GCCTTCTTTC AGGAAACAAT GAAGGGAGAC AGCAGACATC TGAATGAAGA
 301 AGAGGGTGCC AGCGGGTATG AGGAGTGCAT TATCGTTAAT GGGAACTTCA
 351 GTGACCAGTC CTCAGACACG AAGGATGCTC CCTCACCCCC AGTCTTGGAG
 401 GCAATCTGCA CAGAGCCAGT CTGCACACCA GAGACCAGAG GCCGCAGGTC
 451 AAGCTCCCGG CTGTCTAAGA GGGAGGTCTC CAGCCTTCTG AATTACACGC
 501 AGGACATGAC AGGAGATGGA GACAGAGATG ATGAAGTAGA TGATGGGAAT
 551 GGCTCTGATA TTCTAATGCC AAAGCTCACC CGTGAGACCA AGGACACCAG
 601 GACGCGCTCT GAAAGCCCGG CTGTCCGAAC CCGACATAGC AATGGGACCT
 651 CCAGCTTGGA GAGGCAAAGA GCCTCCCCCA GAATCACCCG AGGTCGGCAG
 701 GGCCGCCACC ATGTGCAGGA GTACCCTGTG GAGTTTCCGG CTACCAGGTC
 751 TCGGAGACGT CGAGCATCGT CTTCAGCAAG CACGCCATGG TCATCCCCTG
 801 CCAGCGTCGA CTTCATGGAA GAAGTGACAC CTAAGAGCGT CAGTACCCCA
 851 TCAGTTGACT TGAGCCAGGA TGGAGATCAG GAGGGTATGG ATACCACACA
 901 GGTGGATGCA GAGAGCAGAG ATGGAGACAG CACAGAGTAT CAGGATGATA
 951 AAGAGTTTGG AATAGGTGAC CTCGTGTGGG GAAAGATCAA GGGCTTCTCC
1001 TGGTGGCCTG CCATGGTGGT GTCCTGGAAA GCCACCTCCA AGCGACAGGC
```

FIG. 1B-1

Appl. No. 09/720,086; 102(e): July 23, 2001
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Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

1051 CATGCCCGGA ATGCGCTGGG TACAGTGGTT TGGTGATGGC AAGTTTTCTG

1101 AGATCTCTGC TGACAAACTG GTGGCTCTGG GGCTGTTCAG CCAGCACTTT

1151 AATCTGGCTA CCTTCAATAA GCTGGTTTCT TATAGGAAGG CCATGTACCA

1201 CACTCTGGAG AAAGCCAGGG TTCGAGCTGG CAAGACCTTC TCCAGCAGTC

1251 CTGGAGAGTC ACTGGAGGAC CAGCTGAAGC CCATGCTGGA GTGGGCCCAC

1301 GGTGGCTTCA AGCCTACTGG GATCGAGGGC CTCAAACCCA ACAAGAAGCA

1351 ACCAGTGGTT AATAAGTCGA AGGTGCGTCG TTCAGACAGT AGGAACTTAG

1401 AACCCAGGAG ACGCGAGAAC AAAAGTCGAA GACGCACAAC CAATGACTCT

1451 GCTGCTTCTG AGTCCCCCCC ACCCAAGCGC CTCAAGACAA ATAGCTATGG

1501 CGGGAAGGAC CGAGGGGAGG ATGAGGAGAG CCGAGAACGG ATGGCTTCTG

1551 AAGTCACCAA CAACAAGGGC AATCTGGAAG ACCGCTGTTT GTCCTGTGGA

1601 AAGAAGAACC CTGTGTCCTT CCACCCCCTC TTTGAGGGTG GGCTCTGTCA

1651 GAGTTGCCGG GATCGCTTCC TAGAGCTCTT CTACATGTAT GATGAGGACG

1701 GCTATCAGTC CTACTGCACC GTGTGCTGTG AGGGCCGTGA ACTGCTGCTG

1751 TGCAGTAACA CAAGCTGCTG CAGATGCTTC TGTGTGGAGT GTCTGGAGGT

1801 GCTGGTGGGC GCAGGCACAG CTGAGGATGC CAAGCTGCAG GAACCCTGGA

1851 GCTGCTATAT GTGCCTCCCT CAGCGCTGCC ATGGGGTCCT CCGACGCAGG

1901 AAAGATTGGA ACATGCGCCT GCAAGACTTC TTCACTACTG ATCCTGACCT

1951 GGAAGAATTT GAGCCACCCA AGTTGTACCC AGCAATTCCT GCAGCCAAAA

2001 GGAGGCCCAT TAGAGTCCTG TCTCTGTTTG ATGGAATTGC AACGGGGTAC

2051 TTGGTGCTCA AGGAGTTGGG TATTAAAGTG GAAAAGTACA TTGCCTCCGA

2101 AGTCTGTGCA GAGTCCATCG CTGTGGGAAC TGTTAAGCAT GAAGGCCAGA

2151 TCAAATATGT CAATGACGTC CGGAAAATCA CCAAGAAAAA TATTGAAGAG

2201 TGGGGCCCGT TCGACTTGGT GATTGGTGGA AGCCCATGCA ATGATCTCTC

FIG. 1B-2

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Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

2251 TAACGTCAAT CCTGCCCGCA AAGGTTTATA TGAGGGCACA GGAAGGCTCT

2301 TCTTCGAGTT TTACCACTTG CTGAATTATA CCCGCCCCAA GGAGGGCGAC

2351 AACCGTCCAT TCTTCTGGAT GTTCGAGAAT GTTGTGGCCA TGAAAGTGAA

2401 TGACAAGAAA GACATCTCAA GATTCCTGGC ATGTAACCCA GTGATGATCG

2451 ATGCCATCAA GGTGTCTGCT GCTCACAGGG CCCGGTACTT CTGGGGTAAC

2501 CTACCCGGAA TGAACAGGCC CGTGATGGCT TCAAAGAATG ATAAGCTCGA

2551 GCTGCAGGAC TGCCTGGAGT TCAGTAGGAC AGCAAAGTTA AAGAAAGTGC

2601 AGACAATAAC CACCAAGTCG AACTCCATCA GACAGGGCAA AAACCAGCTT

2651 TTCCCTGTAG TCATGAATGG CAAGGACGAC GTTTTGTGGT GCACTGAGCT

2701 CGAAAGGATC TTCGGCTTCC CTGCTCACTA CACGGACGTG TCCAACATGG

2751 GCCGCGGCGC CCGTCAGAAG CTGCTGGGCA GGTCCTGGAG TGTACCGGTC

2801 ATCAGACACC TGTTTGCCCC CTTGAAGGAC TACTTTGCCT GTGAATAGTT

2851 CTACCCAGGA CTGGGGAGCT CTCGGTCAGA GCCAGTGCCC AGAGTCACCC

2901 CTCCCTGAAG GCACCTCACC TGTCCCCTTT TTAGCTCACC TGTGTGGGGC

2951 CTCACATCAC TGTACCTCAG CTTTCTCCTG CTCAGTGGGA GCAGAGCCTC

3001 CTGGCCCTTG CAGGGGAGCC CCGGTGCTCC CTCCGTGTGC ACAGCTCAGA

3051 CCTGGCTGCT TAGAGTAGCC CGGCATGGTG CTCATGTTCT CTTACCCTGA

3101 AACTTTAAAA CTTGAAGTAG GTAGTAAGAT GGCTTTCTTT TACCCTCCTG

3151 AGTTTATCAC TCAGAAGTGA TGGCTAAGAT ACCAAAAAAA CAAACAAAAA

3201 CAGAAACAAA AAACAAAAAA AAACCTCAAC AGCTCTCTTA GTACTCAGGT

3251 TCATGCTGCA AAATCACTTG AGATTTTGTT TTTAAGTAAC CCGTGCTCCA

3301 CATTTGCTGG AGGATGCTAT TGTGAATGTG GGCTCAGATG AGCAAGGTCA

3351 AGGGGCCAAA AAAAATTCCC CCTCTCCCCC CAGGAGTATT TGAAGATGAT

3401 GTTTATGGTT TAAGTCTTCC TGGCACCTTC CCCTTGCTTT GGTACAAGGG

FIG. 1B-3

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

3451 CTGAAGTCCT GTTGGTCTTG TAGCATTTCC CAGGATGATG ATGTCAGCAG

3501 GGATGACATC ACCACCTTTA GGGCTTTTCC CTGGCAGGGG CCCATGTGGC

3551 TAGTCCTCAC GAAGACTGGA GTAGAATGTT TGGAGCTCAG GAAGGGTGGG

3601 TGGAGTGGCC CTCTTCCAGG TGTGAGGGAT ACGAAGGAGG AAGCTTAGGG

3651 AAATCCATTC CCCACTCCCT CTTGCCAAAT GAGGGGCCCA GTCCCCAACA

3701 GCTCAGGTCC CCAGAACCCC CTAGTTCCTC ATGAGAAGCT AGGACCAGAA

3751 GCACATCGTT CCCCTTATCT GAGCAGTGTT TGGGGAACTA CAGTGAAAAC

3801 CTTCTGGAGA TGTTAAAAGC TTTTTACCCC ACGATAGATT GTGTTTTTAA

3851 GGGGTGCTTT TTTTAGGGGC ATCACTGGAG ATAAGAAAGC TGCATTTCAG

3901 AAATGCCATC GTAATGGTTT TTAAACACCT TTTACCTAAT TACAGGTGCT

3951 ATTTTATAGA AGCAGACAAC ACTTCTTTTT ATGACTCTCA GACTTCTATT

4001 TTCATGTTAC CATTTTTTTT GTAACTCGCA AGGTGTGGGC TTTTGTAACT

4051 TCACAGGTGT GGGGAGAGAC TGCCTTGTTT CAACAGTTTG TCTCCACTGG

4101 TTTCTAATTT TTAGGTGCAA AGATGACAGA TGCCCAGAGT TTACCTTTCT

4151 GGTTGATTAA AGTTGTATTT CTCTAAAAAA AAAAAAAAAA AAAAA

FIG. 1B–4

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Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

Human DNMT3A DNA Sequence

```
   1                                    GCCGCGG CACCAGGGCG CGCAGCCGGG
  28 CCGGCCCGAC CCCACCGGCC ATACGGTGGA GCCATCGAAG CCCCCACCCA
  78 CAGGCTGACA GAGGCACCGT TCACCAGAGG GCTCAACACC GGGATCTATG
 128 TTTAAGTTTT AACTCTCGCC TCCAAAGACC ACGATAATTC CTTCCCCAAA
 178 GCCCAGCAGC CCCCCAGCCC CGCGCAGCCC CAGCCTGCCT CCCGGCGCCC
 228 AGATGCCCGC CATGCCCTCC AGCGGCCCCG GGGACACCAG CAGCTCTGCT
 278 GCGGAGCGGG AGGAGGACCG AAAGGACGGA GAGGAGCAGG AGGAGCCGCG
 328 TGGCAAGGAG GAGCGCCAAG AGCCCAGCAC CACGGCACGG AAGGTGGGGC
 378 GGCCTGGGAG GAAGCGCAAG CACCCCCCGG TGGAAAGCGG TGACACGCCA
 428 AAGGACCCTG CGGTGATCTC CAAGTCCCCA TCCATGGCCC AGGACTCAGG
 478 CGCCTCAGAG CTATTACCCA ATGGGGACTT GGAGAAGCGG AGTGAGCCCC
 528 AGCCAGAGGA GGGGAGCCCT GCTGGGGGGC AGAAGGGCGG GGCCCCAGCA
 578 GAGGGAGAGG GTGCAGCTGA GACCCTGCCT GAAGCCTCAA GAGCAGTGGA
 628 AAATGGCTGC TGCACCCCCA AGGAGGGCCG AGGAGCCCCT GCAGAAGCGG
 678 GCAAAGAACA GAAGGAGACC AACATCGAAT CCATGAAAAT GGAGGGCTCC
 728 CGGGGCCGGC TGCGGGGTGG CTTGGGCTGG GAGTCCAGCC TCCGTCAGCG
 778 GCCCATGCCG AGGCTCACCT TCCAGGCGGG GGACCCCTAC TACATCAGCA
 828 AGCGCAAGCG GGACGAGTGG CTGGCACGCT GGAAAAGGGA GGCTGAGAAG
 878 AAAGCCAAGG TCAGTGCAGG AATGAATGCT GTGGAAGAAA ACCAGGGGCC
 928 CGGGGAGTCT CAGAAGGTGG AGGAGGCCAG CCCTCCTGCT GTGCAGCAGC
 978 CCACTGACCC CGCATCCCCC ACTGTGGCTA CCACGCCTGA GCCCGTGGGG
1028 TCCGATGCTG GGGACAAGAA TGCCACCAAA GCAGGCGATG ACGAGCCAGA
```

FIG. 1C-1

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1078 GTACGAGGAC GGCCGGGGCT TTGGCATTGG GGAGCTGGTG TGGGGGAAAC

1128 TGCGGGGCTT CTCCTGGTGG CCAGGCCGCA TTGTGTCTTG GTGGATGACG

1178 GGCCGGAGCC GAGCAGCTGA AGGCACCCGC TGGGTCATGT GGTTCGGAGA

1228 CGGCAAATTC TCAGTGGTGT GTGTTGAGAA GCTGATGCCG CTGAGCTCGT

1278 TTTGCAGTGC GTTCCACCAG GCCACGTACA ACAAGCAGCC CATGTACCGC

1328 AAAGCCATCT ACGAGGTCCT GCAGGTGGCC AGCAGCCGCG CGGGGAAGCT

1378 GTTCCCGGTG TGCCACGACA GCGATGAGAG TGACACTGCC AAGGCCGTCG

1428 AGGTGCAGAA CAAGCCCATG ATTGAATGGG CCCTGGGGGG CTTCCAGCCT

1478 TCTGGCCCTA AGGGCCTGGA GCCACCAGAA GAAGAGAAGA ATCCCTACAA

1528 AGAAGTGTAC ACGGACATGT GGGTGGAACC TGAGGCAGCT GCCTACGCAC

1578 CACCTCCACC AGCCAAAAAG CCCCGGAAGA GCACAGCGGA GAAGCCCAAG

1628 GTCAAGGAGA TTATTGATGA GCGCACAAGA GAGCGGCTGG TGTACGAGGT

1678 GCGGCAGAAG TGCCGGAACA TTGAGGACAT CTGCATCTCC TGTGGGAGCC

1728 TCAATGTTAC CCTGGAACAC CCCCTCTTCG TTGGAGGAAT GTGCCAAAAC

1778 TGCAAGAACT GCTTTCTGGA GTGTGCGTAC CAGTACGACG ACGACGGCTA

1828 CCAGTCCTAC TGCACCATCT GCTGTGGGGG CCGTGAGGTG CTCATGTGCG

1878 GAAACAACAA CTGCTGCAGG TGCTTTTGCG TGGAGTGTGT GGACCTCTTG

1928 GTGGGGCCGG GGGCTGCCCA GGCAGCCATT AAGGAAGACC CCTGGAACTG

1978 CTACATGTGC GGGCACAAGG GTACCTACGG GCTGCTGCGG CGGCGAGAGG

2028 ACTGGCCCTC CCGGCTCCAG ATGTTCTTCG CTAATAACCA CGACCAGGAA

2078 TTTGACCCTC CAAAGGTTTA CCCACCTGTC CCAGCTGAGA AGAGGAAGCC

2128 CATCCGGGTG CTGTCTCTCT TTGATGGAAT CGCTACAGGG CTCCTGGTGC

2178 TGAAGGACTT GGGCATTCAG GTGGACCGCT ACATTGCCTC GGAGGTGTGT

FIG. 1C-2

Appl. No. 09/720,086; 102(e): July 23, 2001
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2228 GAGGACTCCA TCACGGTGGG CATGGTGCGG CACCAGGGGA AGATCATGTA

2278 CGTCGGGGAC GTCCGCAGCG TCACACAGAA GCATATCCAG GAGTGGGGCC

2328 CATTCGATCT GGTGATTGGG GGCAGTCCCT GCAATGACCT CTCCATCGTC

2378 AACCCTGCTC GCAAGGGCCT CTACGAGGGC ACTGGCCGGC TCTTCTTTGA

2428 GTTCTACCGC CTCCTGCATG ATGCGCGGCC CAAGGAGGGA GATGATCGCC

2478 CCTTCTTCTG GCTCTTTGAG AATGTGGTGG CCATGGGCGT TAGTGACAAG

2528 AGGGACATCT CGCGATTTCT CGAGTCCAAC CCTGTGATGA TTGATGCCAA

2578 AGAAGTGTCA GCTGCACACA GGGCCCGCTA CTTCTGGGGT AACCTTCCCG

2628 GTATGAACAG GCCGTTGGCA TCCACTGTGA ATGATAAGCT GGAGCTGCAG

2678 GAGTGTCTGG AGCATGGCAG GATAGCCAAG TTCAGCAAAG TGAGGACCAT

2728 TACTACGAGG TCAAACTCCA TAAAGCAGGG CAAAGACCAG CATTTTCCTG

2778 TCTTCATGAA TGAGAAAGAG GACATCTTAT GGTGCACTGA AATGGAAAGG

2828 GTATTTGGTT TCCCAGTCCA CTATACTGAC GTCTCCAACA TGAGCCGCTT

2878 GGCGAGGCAG AGACTGCTGG GCCGGTCATG GAGCGTGCCA GTCATCCGCC

2928 ACCTCTTCGC TCCGCTGAAG GAGTATTTTG CGTGTGTGTA AGGGACATGG

2978 GGGCAAACTG AGGTAGCGAC ACAAAGTTAA ACAAACAAAC AAAAAACACA

3028 AAACATAATA AAACACCAAG AACATGAGGA TGGAGAGAAG TATCAGCACC

3078 CAGAAGAGAA AAAGGAATTT AAAACAAAAA CCACAGAGGC GGAAATACCG

3128 GAGGGCTTTG CCTTGCGAAA AGGGTTGGAC ATCATCTCCT GATTTTTCAA

3178 TGTTATTCTT CAGTCCTATT TAAAAACAAA ACCAAGCTCC CTTCCCTTCC

3228 TCCCCCTTCC CTTTTTTTTC GGTCAGACCT TTTATTTTCT ACTCTTTTCA

3278 GAGGGGTTTT CTGTTTGTTT GGGTTTTGTT TCTTGCTGTG ACTGAAACAA

3328 GAAGGTTATT GCAGCAAAAA TCAGTAACAA AAAATAGTAA CAATACCTTG

3378 CAGAGGAAAG GTGGGAGGAG AGGAAAAAAG GGAAATTTTT AAAGAAATCT

FIG. 1C-3

Appl. No. 09/720,086; 102(e): July 23, 2001
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3428 ATATATTGGG TTGTTTTTTT TTTTGTTTTT TGTTTTTTTT TTTTGGGTTT

3478 TTTTTTTTTA CTATATATCT TTTTTTTGTT GTCTCTAGCC TGATCAGATA

3528 GGAGCACAAG CAGGGGACGG AAAGAGAGAG ACACTCAGGC GGCAGCATTC

3578 CCTCCCAGCC ACTGAGCTGT CGTGCCAGCA CCATTCCTGG TCACGCAAAA

3628 CAGAACCCAG TTAGCAGCAG GGAGACGAGA ACACCACACA AGACATTTTT

3678 CTACAGTATT TCAGGTGCCT ACCACACAGG AAACCTTGAA GAAAATCAGT

3728 TTCTAGAAGC CGCTGTTACC TCTTGTTTAC AGTTTATATA TATATGATAG

3778 ATATGAGATA TATATATAAA AGGTACTGTT AACTACTGTA CAACCCGACT

3828 TCATAATGGT GCTTTCAAAC AGCGAGATGA GTAAAAACAT CAGCTTCCAC

3878 GTTGCCTTCT GCGCAAAGGG TTTCACCAAG GATGGAGAAA GGGAGACAGC

3928 TTGCAGATGG CGCGTTCTCA CGGTGGGCTC TTCCCCTTGG TTTGTAACGA

3978 AGTGAAGGAG GAGAACTTGG GAGCCAGGTT CTCCCTGCCA AAAAGGGGGC

4028 TAGATGAGGT GGTCGGGCCC GTGGACAGCT GAGAGTGGGA TTCATCCAGA

4078 CTCATGCAAT AACCCTTTGA TTGTTTTCTA AAAGGAGACT CCCTCGGCAA

4128 GATGGCAGAG GGTACGGAGT CTTCAGGCCC AGTTTCTCAC TTTAGCCAAT

4178 TCGAGGGCTC CTTGTGGTGG GATCAGAACT AATCCAGAGT GTGGGAAAGT

4228 GACAGTCAAA ACCCCACCTG GAGCAAATAA AAAAACATAC AAAACGTAAA

4278 AAAAAAAAAA AAAAAA

FIG. 1C-4

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

Human DNMT3B1 DNA Sequence:

1 GGCCGCGAAT TCGGCACGAG CCCTGCACGG CCGCCAGCCG GCCTCCCGCC

51 AGCCAGCCCC GACCCGCGGC TCCGCCGCCC AGCCGCGCCC CAGCCAGCCC

101 TGCGGCAGGA AAGCATGAAG GGAGACACCA GGCATCTCAA TGGAGAGGAG

151 GACGCCGGCG GGAGGGAAGA CTCGATCCTC GTCAACGGGG CCTGCAGCGA

201 CCAGTCCTCC GACTCGCCCC CAATCCTGGA GGCTATCCGC ACCCCGGAGA

251 TCAGAGGCCG AAGATCAAGC TCGCGACTCT CCAAGAGGGA GGTGTCCAGT

301 CTGCTAAGCT ACACACAGGA CTTGACAGGC GATGGCGACG GGGAAGATGG

351 GGATGGCTCT GACACCCCAG TCATGCCAAA GCTCTTCCGG GAAACCAGGA

401 CTCGTTCAGA AAGCCCAGCT GTCCGAACTC GAAATAACAA CAGTGTCTCC

451 AGCCGGGAGA GGCACAGGCC TTCCCCACGT TCCACCCGAG GCCGGCAGGG

501 CCGCAACCAT GTGGACGAGT CCCCCGTGGA GTTCCCGGCT ACCAGGTCCC

551 TGAGACGGCG GGCAACAGCA TCGGCAGGAA CGCCATGGCC GTCCCCTCCC

601 AGCTCTTACC TTACCATCGA CCTCACAGAC GACACAGAGG ACACACATGG

651 GACGCCCCAG AGCAGCAGTA CCCCCTACGC CCGCCTAGCC CAGGACAGCC

701 AGCAGGGGGG CATGGAGTCC CCGCAGGTGG AGGCAGACAG TGGAGATGGA

751 GACAGTTCAG AGTATCAGGA TGGGAAGGAG TTTGGAATAG GGGACCTCGT

801 GTGGGGAAAG ATCAAGGGCT TCTCCTGGTG GCCCGCCATG GTGGTGTCTT

851 GGAAGGCCAC CTCCAAGCGA CAGGCTATGT CTGGCATGCG GTGGGTCCAG

901 TGGTTTGGCG ATGGCAAGTT CTCCGAGGTC TCTGCAGACA AACTGGTGGC

951 ACTGGGGCTG TTCAGCCAGC ACTTTAATTT GGCCACCTTC AATAAGCTCG

1001 TCTCCTATCG AAAAGCCATG TACCATGCTC TGGAGAAAGC TAGGGTGCGA

1051 GCTGGCAAGA CCTTCCCCAG CAGCCCTGGA GACTCATTGG AGGACCAGCT

1101 GAAGCCCATG TTGGAGTGGG CCCACGGGGG CTTCAAGCCC ACTGGGATCG

1151 AGGGCCTCAA ACCCAACAAC ACGCAACCAG TGGTTAATAA GTCGAAGGTG

FIG. 1D-1

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1201 CGTCGTGCAG GCAGTAGGAA ATTAGAATCA AGGAAATACG AGAACAAGAC

1251 TCGAAGACGC ACAGCTGACG ACTCAGCCAC CTCTGACTAC TGCCCCGCAC

1301 CCAAGCGCCT CAAGACAAAT TGCTATAACA ACGGCAAAGA CCGAGGGGAT

1351 GAAGATCAGA GCCGAGAACA AATGGCTTCA GATGTTGCCA ACAACAAGAG

1401 CAGCCTGGAA GATGGCTGTT TGTCTTGTGG CAGGAAAAAC CCCGTGTCCT

1451 TCCACCCTCT CTTTGAGGGG GGGCTCTGTC AGACATGCCG GGATCGCTTC

1501 CTTGAGCTGT TTTACATGTA TGATGACGAT GGCTATCAGT CTTACTGCAC

1551 TGTGTGCTGC GAGGGCCGAG AGCTGCTGCT TTGCAGCAAC ACGAGCTGCT

1601 GCCGGTGTTT CTGTGTGGAG TGCCTGGAGG TGCTGGTGGG CACAGGCACA

1651 GCGGCCGAGG CCAAGCTTCA GGAGCCCTGG AGCTGCTACA TGTGTCTCCC

1701 GCAGCGCTGT CATGGCGTCC TGCGGCGCCG GAAGGACTGG AACGTGCGCC

1751 TGCAGGCCTT CTTCACCAGT GACACGGGGC TTGAATACGA AGCCCCCAAG

1801 CTGTACCCTG CCATTCCCGC AGCCCGAAGG CGGCCCATTC GAGTCCTGTC

1851 ATTGTTTGAT GGCATCGCGA CAGGCTACCT AGTCCTCAAA GAGTTGGGCA

1901 TAAAGGTAGG AAAGTACGTC GCTTCTGAAG TGTGTGAGGA GTCCATTGCT

1951 GTTGGAACCG TGAAGCACGA GGGGAATATC AAATACGTGA ACGACGTGAG

2001 GAACATCACA AAGAAAAATA TTGAAGAATG GGGCCCATTT GACTTGGTGA

2051 TTGGCGGAAG CCCATGCAAC GATCTCTCAA ATGTGAATCC AGCCAGGAAA

2101 GGCCTGTATG AGGGTACAGG CCGGCTCTTC TTCGAATTTT ACCACCTGCT

2151 GAATTACTCA CGCCCCAAGG AGGGTGATGA CCGGCCGTTC TTCTGGATGT

2201 TTGAGAATGT TGTAGCCATG AAGGTTGGCG ACAAGAGGGA CATCTCACGG

2251 TTCCTGGAGT GTAATCCAGT GATGATTGAT GCCATCAAAG TTTCTGCTGC

2301 TCACAGGGCC CGATACTTCT GGGGCAACCT ACCCGGGATG AACAGGCCCG

2351 TGATAGCATC AAAGAATGAT AAACTCGAGC TGCAGGACTG CTTGGAATAC

2401 AATAGGATAG CCAAGTTAAA GAAAGTACAG ACAATAACCA CCAAGTCGAA

FIG. 1D-2

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Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

2451 CTCGATCAAA CAGGGGAAAA ACCAACTTTT CCCTGTTGTC ATGAATGGCA

2501 AAGAAGATGT TTTGTGGTGC ACTGAGCTCG AAAGGATCTT TGGCTTTCCT

2551 GTGCACTACA CAGACGTGTC CAACATGGGC CGTGGTGCCC GCCAGAAGCT

2601 GCTGGGAAGG TCCTGGAGCG TGCCTGTCAT CCGACACCTC TTCGCCCCTC

2651 TGAAGGACTA CTTTGCATGT GAATAGTTCC AGCCAGGCCC CAAGCCCACT

2701 GGGGTGTGTG GCAGAGCCAG GACCCAGGAG GTGTGATTCC TGAAGGCATC

2751 CCCAGGCCCT GCTCTTCCTC AGCTGTGTGG GTCATACCGT GTACCTCAGT

2801 TCCCTCTTGC TCAGTGGGGG CAGAGCCACC TGACTCTTGC AGGGGTAGCC

2851 TGAGGTGCCG CCTCCTTGTG CACAAATCAG ACCTGGCTGC TTGGAGCAGC

2901 CTAACACGGT GCTCATTTTT TCTTCTCCTA AAACTTTAAA ACTTGAAGTA

2951 GGTAGCAACG TGGCTTTTTT TTTTTCCCTT CCTGGGTCTA CCACTCAGAG

3001 AAACAATGGC TAAGATACCA AAACCACAGT GCCGACAGCT CTCCAATACT

3051 CAGGTTAATG CTGAAAAATC ATCCAAGACA GTTATTGCAA GAGTTTAATT

3101 TTTGAAAACT GGGTACTGCT ATGTGTTTAC AGACGTGTGC AGTTGTAGGC

3151 ATGTAGCTAC AGGACATTTT TAAGGGCCCA GGATCGTTTT TTCCCAGGGC

3201 AAGCAGAAGA GAAAATGTTG TATATGTCTT TTACCCGGCA CATTCCCCTT

3251 GCCTAAATAC AAGGGCTGGA GTCTGCACGG GACCTATTAG AGTATTTTCC

3301 ACAATGATGA TGATTTCAGC AGGGATGACG TCATCATCAC ATTCAGGGCT

3351 ATTTTTTCCC CCACAAACCC AAGGGCAGGG GCCACTCTTA GCTAAATCCC

3401 TCCCCGTGAC TGCAATAGAA CCCTCTGGGG AGCTCAGGAA GGGGTGTGCT

3451 GAGTTCTATA ATATAAGCTG CCATATATTT TGTAGACAAG TATGGCTCCT

3501 CCATATCTCC CTCTTCCCTA GGAGAGGAGT GTGAAGCAAG GAGCTTAGAT

3551 AAGACACCCC CTCAAACCCA TTCCCTCTCC AGGAGACCTA CCCTCCACAG

3601 GCACAGGTCC CCAGATGAGA AGTCTGCTAC CCTCATTTCT CATCTTTTTA

3651 CTAAACTCAG AGGCAGTGAC AGCAGTCAGG GACAGACATA CATTTCTCAT

FIG. 1D-3

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Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

3701 ACCTTCCCCA CATCTGAGAG ATGACAGGGA AAACTGCAAA GCTCGGTGCT

3751 CCCTTTGGAG ATTTTTTAAT CCTTTTTTAT TCCATAAGAA GTCGTTTTTA

3801 GGGAGAACGG GAATTCAGAC AAGCTGCATT TCAGAAATGC TGTCATAATG

3851 GTTTTTAACA CCTTTTACTC TTCTTACTGG TGCTATTTTG TAGAATAAGG

3901 AACAACGTTG ACAAGTTTTG TGGGGCTTTT TATACACTTT TTAAAATCTC

3951 AAACTTCTAT TTTTATGTTT AACGTTTTCA TTAAAATTTT TTTGTAACTG

4001 GAGCCACGAC GTAACAAATA TGGGGAAAAA ACTGTGCCTT GTTTCAACAG

4051 TTTTTGCTAA TTTTTAGGCT GAAAGATGAC GGATGCCTAG AGTTTACCTT

4101 ATGTTTAATT AAAATCAGTA TTTGTCTAAA AAAAAAAAAA AAAAA

FIG. 1D-4

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

Mouse Dnmt3a Protein

1 MPSSGPGDTS SSSLEREDDR KEGEEQEENR GKEERQEPSA TARKVGRPGR

51 KRKHPPVESS DTPKDPAVTT KSQPMAQDSG PSDLLPNGDL EKRSEPQPEE

101 GSPAAGQKGG APAEGEGTET PPEASRAVEN GCCVTKEGRG ASAGEGKEQK

151 QTNIESMKME GSRGRLRGGL GWESSLRQRP MPRLTFQAGD PYYISKRKRD

201 EWLARWKREA EKKAKVIAVM NAVEENQASG ESQKVEEASP PAVQQPTDPA

251 SPTVATTPEP VGGDAGDKNA TKAADDEPEY EDGRGFGIGE LVWGKLRGFS

301 WWPGRIVSWW MTGRSRAAEG TRWVMWFGDG KFSVVCVEKL MPLSSFCSAF

351 HQATYNKQPM YRKAIYEVLQ VASSRAGKLF PACHDSDESD SGKAVEVQNK

401 QMIEWALGGF QPSGPKGLEP PEEEKNPYKE VYTDMMVEPE AAAYAPPPPA

451 KKPRKSTTEK PKVKEIIDER TRERLVYEVR QKCRNIEDIC ISCGSLNVTL

501 EHPLFIGGMC QNCKNCFLEC AYQYDDDGYQ SYCTICCGGR EVLMCGNNNC

551 CRCFCVECVD LLVGPGAAQA AIKEDPWNCY MCGHKGTYGL LRRREDWPSR

601 LQMFFANNHD QEFDPPKVYP PVPAEKRKPI RVLSLFDGIA TGLLVLKDLG

651 IQVDRYIASE VCEDSITVGM VRHQGKIMYV GDVRSVTQKH IQEWGPFDLV

701 IGGSPCNDLS IVNPARKGLY EGTGRLFFEF YRLLHDARPK EGDDRPFFWL

751 FENVVAMGVS DKRDISRFLE SNPVMIDAKE VSAAHRARYF WGNLPGMNRP

801 LASTVNDKLE LQECLEHGRI AKFSKVRTIT TRSNSIKQGK DQHFPVFMNE

851 KEDILWCTEM ERVFGFPVHY TDVSNMSRLA RQRLLGRSWS VPVIRHLFAP

901 LKEYFACV*

FIG. 2A

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Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

Mouse Dnmt3b1 Protein

1 MKGDSRHLNE EEGASGYEEC IIVNGNFSDQ SSDTKDAPSP PVLEAICTEP

51 VCTPETRGRR SSSRLSKREV SSLLNYTQDM TGDGDRDDEV DDGNGSDILM

101 PKLTRETKDT RTRSESPAVR TRHSNGTSSL ERQRASPRIT RGRQGRHHVQ

151 EYPVEFPATR SRRRRASSSA STPWSSPASV DFMEEVTPKS VSTPSVDLSQ

201 DGDQEGMDTT QVDAESRDGD STEYQDDKEF GIGDLVWGKI KGFSWWPAMV

251 VSWKATSKRQ AMPGMRWVQW FGDGKFSEIS ADKLVALGLF SQHFNLATFN

301 KLVSYRKAMY HTLEKARVRA GKTFSSSPGE SLEDQLKPML EWAHGGFKPT

351 GIEGLKPNKK QPVVNKSKVR RSDSRNLEPR RRENKSRRRT TNDSAASESP

401 PPKRLKTNSY GGKDRGEDEE SRERMASEVT NNKGNLEDRC LSCGKKNPVS

451 FHPLFEGGLC QSCRDRFLEL FYMYDEDGYQ SYCTVCCEGR ELLLCSNTSC

501 CRCFCVECLE VLVGAGTAED AKLQEPWSCY MCLPQRCHGV LRRRKDWNMR

551 LQDFFTTDPD LEEFEPPKLY PAIPAAKRRP IRVLSLFDGI ATGYLVLKEL

601 GIKVEKYIAS EVCAESIAVG TVKHEGQIKY VNDVRKITKK NIEEWGPFDL

651 VIGGSPCNDL SNVNPARKGL YEGTGRLFFE FYHLLNYTRP KEGDNRPFFW

701 MFENVVAMKV NDKKDISRFL ACNPVMIDAI KVSAAHRARY FWGNLPGMNR

751 PVMASKNDKL ELQDCLEFSR TAKLKKVQTI TTKSNSIRQG KNQLFPVVMN

801 GKDDVLWCTE LERIFGFPAH YTDVSNMGRG ARQKLLGRSW SVPVIRHLFA

851 PLKDYFACE*

FIG. 2B

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

Human DNMT3A Protein

1 MPAMPSSGPG DTSSSAAERE EDRKDGEEQE EPRGKEERQE PSTTARKVGR

51 PGRKRKHPPV ESGDTPKDPA VISKSPSMAQ DSGASELLPN GDLEKRSEPQ

101 PEEGSPAGGQ KGGAPAEGEG AAETLPEASR AVENGCCTPK EGRGAPAEAG

151 KEQKETNIES MKMEGSRGRL RGGLGWESSL RQRPMPRLTF QAGDPYYISK

201 RKRDEWLARW KREAEKKAKV IAGMNAVEEN QGPGESQKVE EASPPAVQQP

251 TDPASPTVAT TPEPVGSDAG DKNATKAGDD EPEYEDGRGF GIGELVWGKL

301 RGFSWWPGRI VSWWMTGRSR AAEGTRWVMW FGDGKFSVVC VEKLMPLSSF

351 CSAFHQATYN KQPMYRKAIY EVLQVASSRA GKLFPVCHDS DESDTAKAVE

401 VQNKPMIEWA LGGFQPSGPK GLEPPEEEKN PYKEVYTDMW VEPEAAAYAP

451 PPPAKKPRKS TAEKPKVKEI IDERTRERLV YEVRQKCRNI EDICISCGSL

501 NVTLEHPLFV GGMCQNCKNC FLECAYQYDD DGYQSYCTIC CGGREVLMCG

551 NNNCCRCFCV ECVDLLVGPG AAQAAIKEDP WNCYMCGHKG TYGLLRRRED

601 WPSRLQMFFA NNHDQEFDPP KVYPPVPAEK RKPIRVLSLF DGIATGLLVL

651 KDLGIQVDRY IASEVCEDSI TVGMVRHQGK IMYVGDVRSV TQKHIQEWGP

701 FDLVIGGSPC NDLSIVNPAR KGLYEGTGRL FFEFYRLLHD ARPKEGDDRP

751 FFWLFENVVA MGVSDKRDIS RFLESNPVMI DAKEVSAAHR ARYFWGNLPG

801 MNRPLASTVN DKLELQECLE HGRIAKFSKV RTITTRSNSI KQGKDQHFPV

851 FMNEKEDILW CTEMERVFGF PVHYTDVSNM SRLARQRLLG RSWSVPVIRH

901 LFAPLKEYFA CV*

FIG. 2C

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Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

Human DNMT3B1 Protein

1 MKGDTRHLNG EEDAGGREDS ILVNGACSDQ SSDSPPILEA IRTPEIRGRR

51 SSSRLSKREV SSLLSYTQDL TGDGDGEDGD GSDTPVMPKL FRETRTRSES

101 PAVRTRNNNS VSSRERHRPS PRSTRGRQGR NHVDESPVEF PATRSLRRRA

151 TASAGTPWPS PPSSYLTIDL TDDTEDTHGT PQSSSTPYAR LAQDSQQGGM

201 ESPQVEADSG DGDSSEYQDG KEFGIGDLVW GKIKGFSWWP AMVVSWKATS

251 KRQAMSGMRW VQWFGDGKFS EVSADKLVAL GLFSQHFNLA TFNKLVSYRK

301 AMYHALEKAR VRAGKTFPSS PGDSLEDQLK PMLEWAHGGF KPTGIEGLKP

351 NNTQPVVNKS KVRRAGSRKL ESRKYENKTR RRTADDSATS DYCPAPKRLK

401 TNCYNNGKDR GDEDQSREQM ASDVANNKSS LEDGCLSCGR KNPVSFHPLF

451 EGGLCQTCRD RFLELFYMYD DDGYQSYCTV CCEGRELLLC SNTSCCRCFC

501 VECLEVLVGT GTAAEAKLQE PWSCYMCLPQ RCHGVLRRRK DWNVRLQAFF

551 TSDTGLEYEA PKLYPAIPAA RRRPIRVLSL FDGIATGYLV LKELGIKVGK

601 YVASEVCEES IAVGTVKHEG NIKYVNDVRN ITKKNIEEWG PFDLVIGGSP

651 CNDLSNVNPA RKGLYEGTGR LFFEFYHLLN YSRPKEGDDR PFFWMFENVV

701 AMKVGDKRDI SRFLECNPVM IDAIKVSAAH RARYFWGNLP GMNRPVIASK

751 NDKLELQDCL EYNRIAKLKK VQTITTKSNS IKQGKNQLFP VVMNGKEDVL

801 WCTELERIFG FPVHYTDVSN MGRGARQKLL GRSWSVPVIR HLFAPLKDYF

851 ACE*

FIG. 2D

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```
Dnmt3a    1 MPSSGPGDTSSSSLEREDDRKEGEEQEENRGKEERQEPSATARKVGRPGR 50

Dnmt3a   51 KRKHPPVESSDTPKDPAVTTKSQPMAQDSGPSD....LLPNGDLEKRSEP 96
                              .   |. : :: | |      :: ||.    .|
Dnmt3b    1 ..................MKGDSRHLNEEEGASGYEECIIVNGNFSDQSSD 33

Dnmt3a   97 QPEEGSP....AAGQKGGAPAEGEGTETPPEAS.RAVENGCCVTKE..GR 139
             :  ||     |   .      |  |  .     | | | .     |.:  |
Dnmt3b   34 TKDAPSPPVLEAICTEPVCTPETRGRRSSSRLSKREVSSLLNYTQDMTGD 83

Dnmt3a  140 G.....ASAGEG......KEQKQTNIESMKMEGSRGRLRGGLGWESSLRQ 178
            |         | |       |  ::|      : |     | |    |  | ||
Dnmt3b   84 GDRDDEVDDGNGSDILMPKLTRETKDTRTRSESPAVRTRHSNGTSSLERQ 133

Dnmt3a  179 RPMPRLTFQAGDPYYISKRKRDEWLARWKREAEKKAKVIAVMNAVEENQA 228
            |  ||:|       :::       |:   .      :: :  .  .    . |
Dnmt3b  134 RASPRITRGRQGRHHV.....QEYPVEFPATRSRRRRASSSASTPWSSPA 178

Dnmt3a  229 SGESQKVEEASPPAVQQPTDPASPTVATTPEPVGGDAGDKNATKAADDEP 278
            | :    .|| .| .|  |    |  ..   :  | |     .|      |
Dnmt3b  179 SVDF..MEEVTPKSVSTP....SVDLSQDGDQEGMDTTQVDAESRDGDST 222

Dnmt3a  279 EYEDGRGFGIGELVWGKLRGFSWWPGRIVSWWMTGRSRAAEGTRWVMWFG 328
            ||:| : ||||:|||||::||||||  :|||  | : .|  | ||| |||
Dnmt3b  223 EYQDDKEFGIGDLVWGKIKGFSWWPAMVVSWKATSKRQAMPGMRWVQWFG 272

Dnmt3a  329 DGKFSVVCVEKLMPLSSFCSAFHQATYNKQPMYRKAIYEVLQVASSRAGK 378
            ||||| :  :||. |  |   |. ||:||   ||||.|  |: |  ||||
Dnmt3b  273 DGKFSEISADKLVALGLFSQHFNLATFNKLVSYRKAMYHTLEKARVRAGK 322

Dnmt3a  379 LFPACHDSDESDSGKAVEVQNKQMIEWALGGFQPSGPKGLEPPEEEK..N 426
             |       |  |...| | | |:||| |||.|.| .||.| ..:    |
Dnmt3b  323 TF.......SSSPGESLEDQLKPMLEWAHGGFKPTGIEGLKPNKKQPVVN 365

Dnmt3a  427 PYKEVYTDMW.VEP.............EAAAYAPPPPAKKPRKSTTEKPK 462
              |   .|   .||              :.||   ||| :    |   | :
Dnmt3b  366 KSKVRRSDSRNLEPRRRENKSRRRTTNDSAASESPPPKRLKTNSYGGKDR 415
```

FIG.3A-1

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```
Dnmt3a  463 VKEIIDERTRERLVYEVRQKCRNIEDICISCGSLNVTLEHPFFIGGMCQN 512
                .   ||  .|||:  ||      |:|| |:|||  |    || | ||:||.
Dnmt3b  416 GE...DEESRERMASEVTNNKGNLEDRCLSCGKKNPVSFHPLFEGGLCQS 462

Dnmt3a  513 CKNCFLECAYQYDDDGYQSYCTICCGGREVLMCGNNNCCRCFCVECVDLL 562
            |:. |||  | ||:|||||||:|| |||.|:| | .|||||||.:.|
Dnmt3b  463 CRDRFLELFYMYDEDGYQSYCTVCCEGRELLLCSNTSCCRCFCVECLEVL 512

Dnmt3a  563 VGPGAAQAAIKEDPWNCYMCGHKGTYGLLRRREDWPSRLQMFFANNHD.Q 611
            || | |: |  ::||.||||  .  :|.||||.||  ||| ||  . | :
Dnmt3b  513 VGAGTAEDAKLQEPWSCYMCLPQRCHGVLRRRKDWNMRLQDFFTTDPDLE 562

Dnmt3a  612 EFDPPKVYPPVPAEKRKPIRVLSLFDGIATGLLVLKDLGIQVDRYIASEV 661
            ||:|||.|| :|| ||:|||||||||||||| ||||:|||.|::||||||
Dnmt3b  563 EFEPPKLYPAIPAAKRRPIRVLSLFDGIATGYLVLKELGIKVEKYIASEV 612

Dnmt3a  662 CEDSITVGMVRHQGKIMYVGDVRSVTQKHIQEWGPFDLVIGGSPCNDLSI 711
            | :|| || |:|:|.| || ||| :|.|.|:||||||||||||||||||
Dnmt3b  613 CAESIAVGTVKHEGQIKYVNDVRKITKKNIEEWGPFDLVIGGSPCNDLSN 662

Dnmt3a  712 VNPARKGLYEGTGRLFFEFYRLLHDARPKEGDDRPFFWLFENVVAMGVSD 761
            |||||||||||||||||||| ||.  ||||||.|||||:||||||| |.|
Dnmt3b  663 VNPARKGLYEGTGRLFFEFYHLLNYTRPKEGDNRPFFWMFENVVAMKVND 712

Dnmt3a  762 KRDISRFLESNPVMIDAKEVSAAHRARYFWGNLPGMNRPLASTVNDKLEL 811
            |:|||||  ||||||| .|||||||||||||||||. .. ||||||
Dnmt3b  713 KKDISRFLACNPVMIDAIKVSAAHRARYFWGNLPGMNRPVMASKNDKLEL 762

Dnmt3a  812 QECLEHGRIAKFSKVRTITTRSNSIKQGKDQHFPVFMNEKEDILWCTEME 861
            |:|||  | ||  ||.||||:||||:|||.| ||| || |:|:|||||:|
Dnmt3b  763 QDCLEFSRTAKLKKVQTITTKSNSIRQGKNQLFPVVMNGKDDVLWCTELE 812

Dnmt3a  862 RVFGFPVHYTDVSNMSRLARQRLLGRSWSVPVIRHLFAPLKEYFACV*   909
            |:|||| |||||||| | |||:||||||||||||||||||:|||| |
Dnmt3b  813 RIFGFPAHYTDVSNMGRGARQKLLGRSWSVPVIRHLFAPLKDYFACE*   860
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FIG.3A-2

Appl. No. 09/720,086; 102(e): July 23, 2001
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Inventors: Li et al.; Tel: 202/371-2600
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```
DNMT3A    1 MPAMPSSGPGDTSSSAAEREEDRKDGEEQEEPRGKEERQEPSTTARKVGR

DNMT3A   51 PGRKRKHPPVESGDTPKDPAVISKSPSMAQDSGASELLPNGDLEKRSEPQ
                                |           |     | |.     :. |:
DNMT3B    1 ...............MKGDTRHLNGEEDAGGREDSILVNGACSDQSSDSP

DNMT3A  101 PEEGSPAGGQKGGAPAEGEGAAETLPEASRAVENGCCTPKEGRGAPAEAG
            |   .    :  |  |    .   .         :.          |  .:
DNMT3B   36 PILEAIRTPEIRGGWASSRLSKREVSSLLSYTQDLTGDGDGEDGDGSDTP

DNMT3A  151 KEQKETNIESMKMEGSRGRLRGGLGWESSLRQRPMPRLTFQAGDPYYISK
               |       : |    | |       |  | || || |       :: .
DNMT3B   86 VMPKLFRETRTRSESPAVRTRNNNSVSSRERHRPSPRSTRGRQGRNHVDE

DNMT3A  201 RKRDEWLARWKREAEKKAKVIAGMNAVEENQGPGESQKVEEASPPAVQQP
               :    |  |     .     .          .   |:       |
DNMT3B  136 SPVEFPATRSLRRRATASAGTPWPSPPSSYLTIDLTDDTEDTH..GTPQS

DNMT3A  251 TDPASPTVATTPEPVGSDAGDKNATKAGDDEPEYEDGRGFGIGELVWGKL
            .       .|   :  | :.    |      |  ||:||: ||||:|||||:
DNMT3B  184 SSTPYARLAQDSQQGGMESPQVEADSGDGDSSEYQDGKEFGIGDLVWGKI

DNMT3A  301 RGFSWWPGRIVSWWMTGRSRAAEGTRWVMWFGDGKFSVVCVEKLMPLSSF
            :||||||  :|||  | : .|  | ||| |||||||| |  :||. |  |
DNMT3B  234 KGFSWWPAMVVSWKATSKRQAMSGMRWVQWFGDGKFSEVSADKLVALGLF

DNMT3A  351 CSAFHQATYNKQPMYRKAIYEVLQVASSRAGKLFPVCHDSDESDTAKAVE
               |. ||:||   ||||.|  |: |  |||| ||       |    ..|
DNMT3B  284 SQHFNLATFNKLVSYRKAMYHALEKARVRAGKTFP.......SSPGDSLE

DNMT3A  401 VQNKPMIEWALGGFQPSGPKGLEP....PEEEKNPYKEVYTDMWVE....
             | |||:||| |||.  | .||.|    |   |.  :   .
DNMT3B  327 DQLKPMLEWAHGGFKPTGIEGLKPNNTQPVVNKSKVRRAGSRKLESRKYE

DNMT3A  443 .......PEAAAYAPPPPAKKPRKSTAEKPKVKEIIDERTRERLVYEVRQ
                  : .|  .   || |  |.          ::..||.:  :|
DNMT3B  377 NKTRRRTADDSATSDYCPAPKRLKTNCYNNGKDRGDEDQSREQMASDVAN
```

FIG.3B-1

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

```
DNMT3A  486 KCRNIEDICISCGSLNVTLEHPLFVGGMCQNCKNCFLECAYQYDDDGYQS
DNMT3B  427 NKSSLEDGCLSCGRKNPVSFHPLFEGGLCQTCRDRFLELFYMYDDDGYQS

DNMT3A  536 YCTICCGGREVLMCGNNNCCRCFCVECVDLLVGPGAAQAAIKEDPWNCYM
DNMT3B  477 YCTVCCEGRELLLCSNTSCCRCFCVECLEVLVGTGTAAEAKLQEPWSCYM

DNMT3A  586 CGHKGTYGLLRRREDWPSRLQMFFANNHDQEFDPPKVYPPVPAEKRKPIR
DNMT3B  527 CLPQRCHGVLRRRKDWNVRLQAFFTSDTGLEYEAPKLYPAIPAARRRPIR

DNMT3A  636 VLSLFDGIATGLLVLKDLGIQVDRYIASEVCEDSITVGMVRHQGKIMYVG
DNMT3B  577 VLSLFDGIATGYLVLKELGIKVGKYVASEVCEESIAVGTVKHEGNIKYVN

DNMT3A  686 DVRSVTQKHIQEWGPFDLVIGGSPCNDLSIVNPARKGLYEGTGRLFFEFY
DNMT3B  627 DVRNITKKNIEEWGPFDLVIGGSPCNDLSNVNPARKGLYEGTGRLFFEFY

DNMT3A  736 RLLHDARPKEGDDRPFFWLFENVVAMGVSDKRDISRFLESNPVMIDAKEV
DNMT3B  677 HLLNYSRPKEGDDRPFFWMFENVVAMKVGDKRDISRFLECNPVMIDAIKV

DNMT3A  786 SAAHRARYFWGNLPGMNRPLASTVNDKLELQECLEHGRIAKFSKVRTITT
DNMT3B  727 SAAHRARYFWGNLPGMNRPVIASKNDKLELQDCLEYNRIAKLKKVQTITT

DNMT3A  836 RSNSIKQGKDQHFPVFMNEKEDILWCTEMERVFGFPVHYTDVSNMSRLAR
DNMT3B  777 KSNSIKQGKNQLFPVVMNGKEDVLWCTELERIFGFPVHYTDVSNMGRGAR

DNMT3A  886 QRLLGRSWSVPVIRHLFAPLKEYFACV*
DNMT3B  827 QKLLGRSWSVPVIRHLFAPLKDYFACE*
```

FIG.3B-2

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

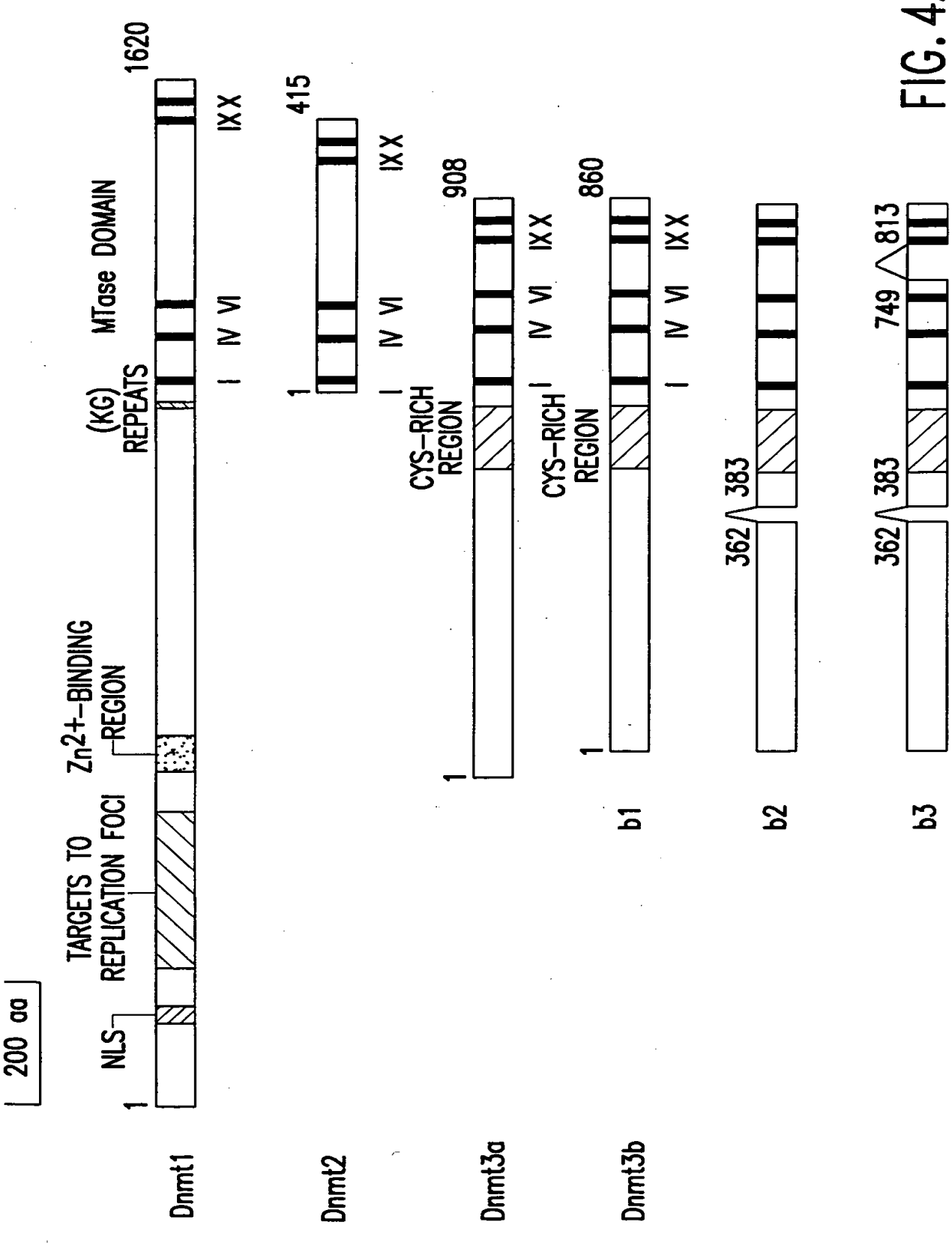

FIG. 4A

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

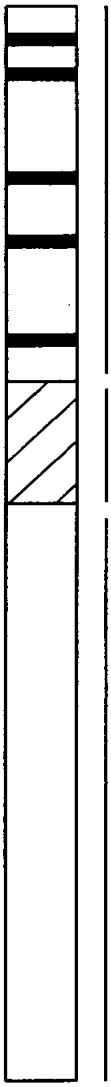

FIG. 4B

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

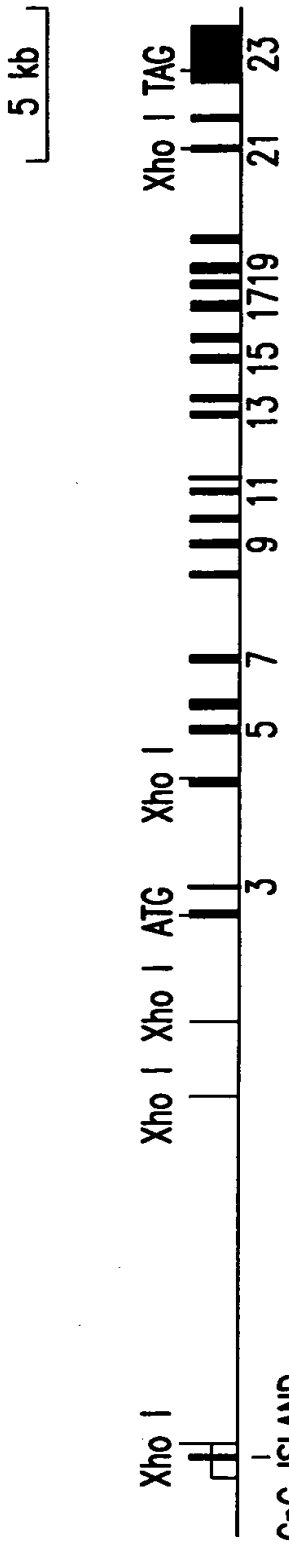

FIG. 4C

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Appl. No. 09/720,086; 102(e) July 23, 2001
Dkt. No. 0609.456002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

```
Exon1  (>=90bp)CGGCAGgtgagcgccccgggg.intron(17618bp).tggcttctcccacagGAAAGC
Exon2  ( 148bp)TCAGAGgtggctgggcagtgg.intron(  887bp).CTGTTTCCTCTACAGGCCGAA
Exon3  (  62bp)ACACAGgtatggtctctgctc.intron( 3343bp).tgtttccttataaagGACTTG
Exon4  ( 102bp)CCAGCTgtaagtagccacacc.intron( 1642bp).ctctcttgcttctagGTCCGA
Exon5  ( 125bp)ACCAGGgttgttccccagatg.intron(  602bp).tccttctgtccacagTCCCTG
Exon6  ( 222bp)TATCAGgtatggccgagaggg.intron( 1403bp).tgggttttcttccagGATGGG
Exon7  ( 159bp)TCCGAGgtgagtccggggaag.intron( 2588bp).gtctttctcttttagGTCTCT
Exon8  ( 108bp)CTGGAGgtaacatgggatgag.intron(  917bp).actctgcctttgcagAAAGCT
Exon9  ( 145bp)AACCAGgtgggaatgagtccc.intron(  765bp).ttttcccctcaaaagTGGTTA
Exon10(  60bp)AATACGgtatttccttcctgt.intron( 1813bp).aattacctttcacagAGAACA
Exon11( 126bp)GCCGAGgtgattgttgggtac.intron(  115bp).ttcttttctcaatagAACAAA
Exon12(  45bp)TGGAAGgtaacgttctctccc.intron( 1095bp).ctgtttttcttacagATGGCT
Exon13(  80bp)TGCCGGgtaagtcctcctact.intron(  417bp).ctctctggctgccagGATCGC
Exon14( 113bp)CTGCCGgtgagcactgggccc.intron( 1160bp).tgccactgggtccagGTGTTT
Exon15( 184bp)GAATACgtaagccacaggctc.intron(  600bp).ttccttacctggcagGAAGCC
Exon16(  85bp)CGACAGgtgagttcggggaac.intron(  824bp).ctctggcccccacagGCTACC
Exon17( 146bp)AAAAATgtgagggcagtctgt.intron(  536bp).gtctctctctttcagATTGAA
Exon18(  91bp)TGTATGgtgagcatccttctc.intron(  352bp).cttttctgagcacagAGGGTA
Exon19( 149bp)CTGGAGgtgagggaatctggg.intron(  958bp).tctttctccccacagTGTAAT
Exon20(  86bp)GAACAGgtaacaaagggctct.intron( 2867bp).tttggctgttcccagGCCCGT
Exon21(  70bp)GCCAAGttaaagaaagtacag.intron(  801bp).catttgttctccagTTAAAG
Exon22( 119bp)CGAAAGgtgagcaaggctgca.intron( 1434bp).ctccggtacccccagGATCTT
Exon23(1585bp)
```

FIG.4D

Appl. No. 09/720,086; 102(e) July 23, 2001
Dkt. No. 0609.45600D2/JAG/KRM/DDN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

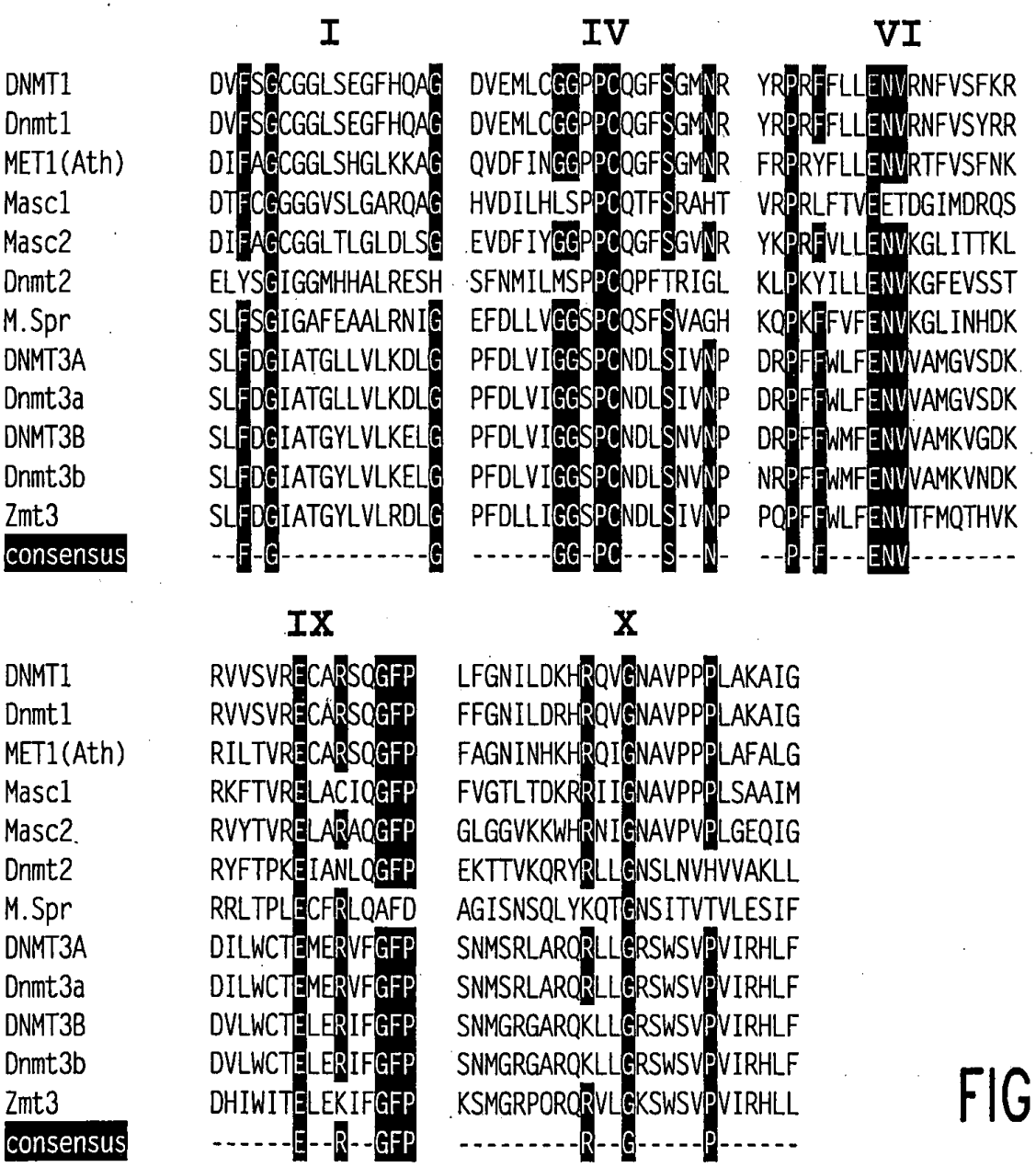

FIG. 5A

Sheet 30 of 38
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Dkt. No. 0609.45600D2/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

```
DNMT3A          EDICISCG......SLNVTLEHPLFVGGMCQNCKNCFLECAYQYDDDGYQSYCT
Dnmt3a          EDICISCG......SLNVTLEHPFFIGGMCQNCKNCFLECAYQYDDDGYQSYCT
DNMT3B          EDGCLSCG......RKNPVSFHPLFEGGLCQTCRDRFLELFYMYDDDGYQSYCT
Dnmt3b          EDRCLSCG......KKNPVSFHPLFEGGLCQSCRDRFLELFYMYDEDGYQSYCT
Zmt3            EDFCLSCG......SMSVDIIHPLFEGKLCTNCKFNFTETLYRYDEDGYQSYCT
ATRX_Human      IVSCTACGQQVNHFQKDSIYRHPSLQVLICKNCFKYYMSDDISRDSDGMDEQCR
ATRX_Mouse      IVSCTACGQQVNHFQKDSIYRHPSLQVLICKNCFKYYMSDDISRDSDGMDEQCR
Consensus          C  C                        C  C                  C

DNMT3A          ICCGGREVLMCGNNNCCRCFCVECVDLLVGPGAAQAAIKE.DPWNCYMCGHKGT
Dnmt3a          ICCGGREVLMCGNNNCCRCFCVECVDLLVGPGAAQAAIKE.DPWNCYMCGHKGT
DNMT3B          VCCEGRELLLCSNTSCCRCFCVECLEVLVGTGTAAEAKLQ.EPWSCYMCLPQRC
Dnmt3b          VCCEGRELLLCSNTSCCRCFCVECLEVLVGAGTAEDAKLQ.EPWSCYMCLPQRC
Zmt3            VCCSGMEVILCAHDSCCRSFCVDCLDILVCQGTFDRLKNV.DPWTCYLCAPETS
ATRX_Human      WCAEGGNLICC..DFCHNAFCKKCILRNLGRKELSTIMDENNQWYCYICHPEPL
ATRX_Mouse      WCAEGGNLICC..DFCHNAFCKKCILRNLGRKELSTIMDENNQWYCYICHPEPL
Consensus        C        C    C    C  C                      C  C
```

FIG.5B

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

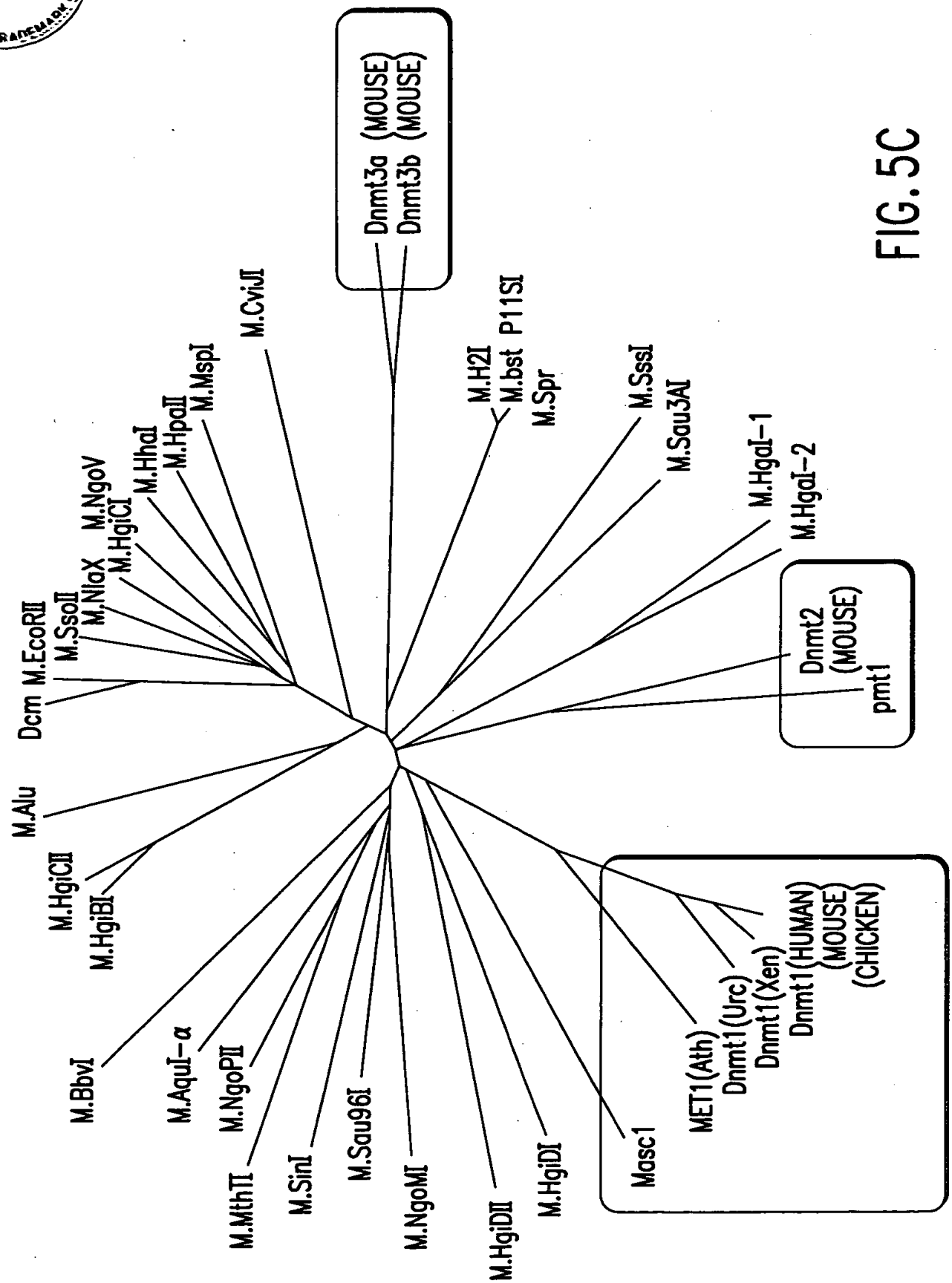


FIG. 5C

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

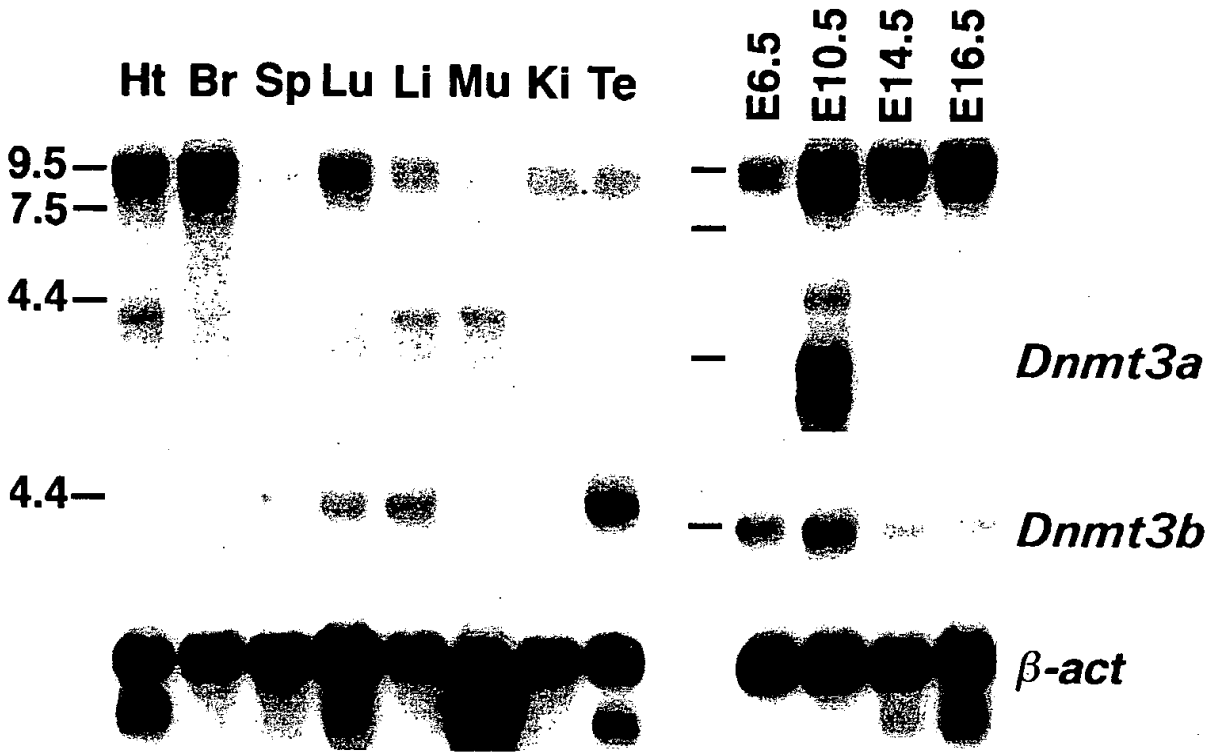


FIG.6A

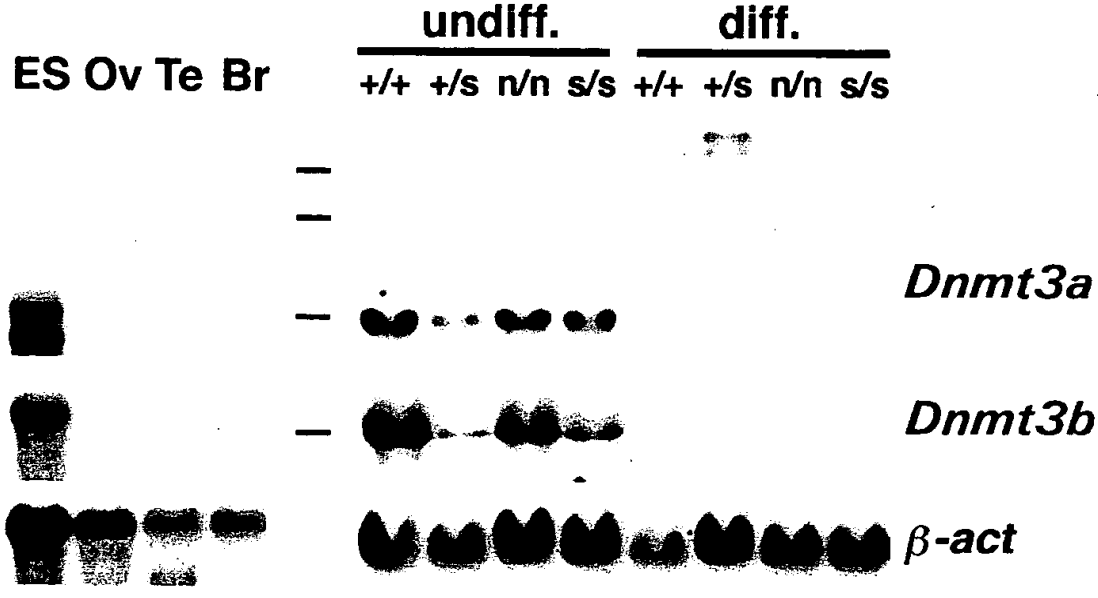


FIG.6B

FIG.6C

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

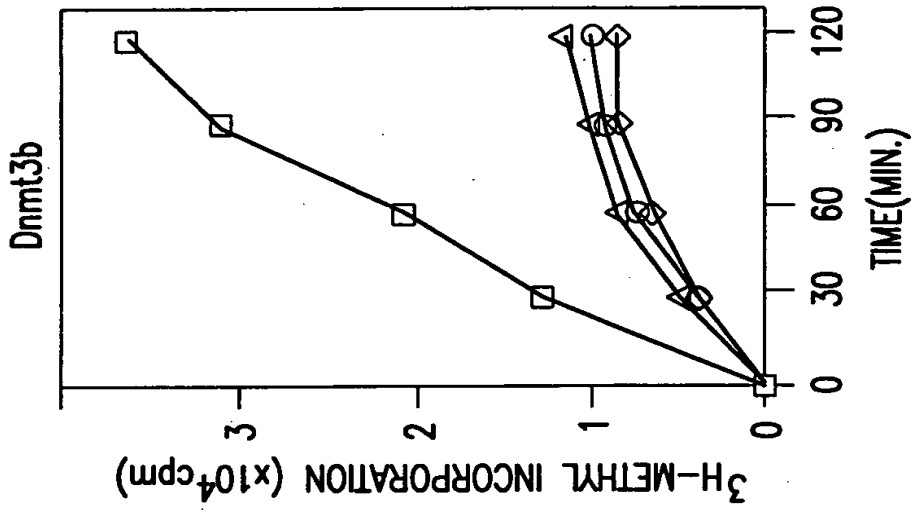


FIG. 7C

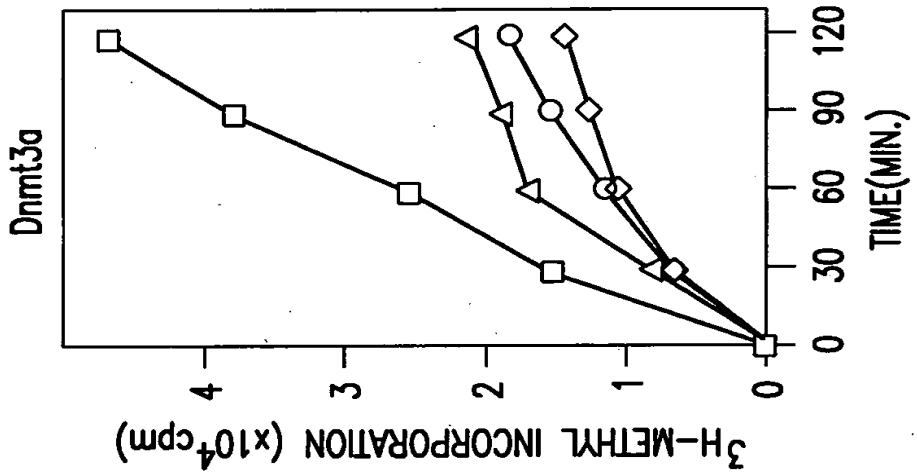


FIG. 7B

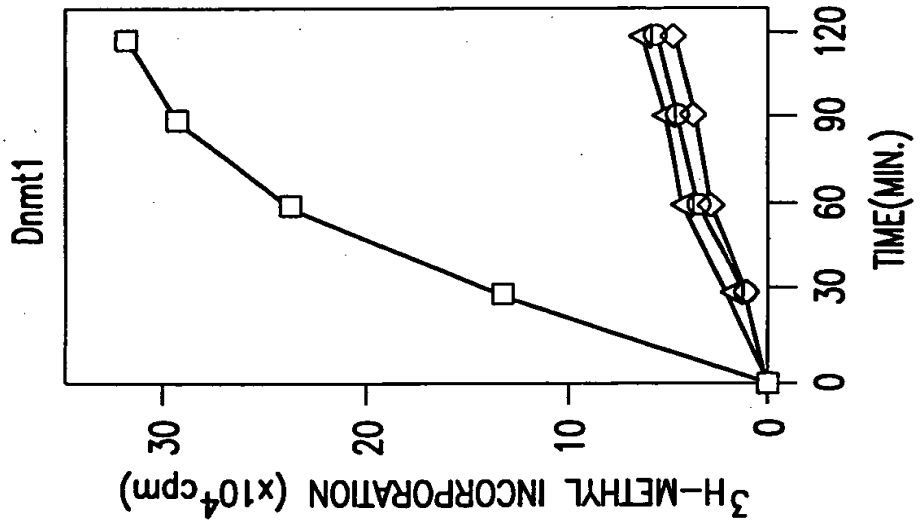


FIG. 7A

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

FIG. 7D

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

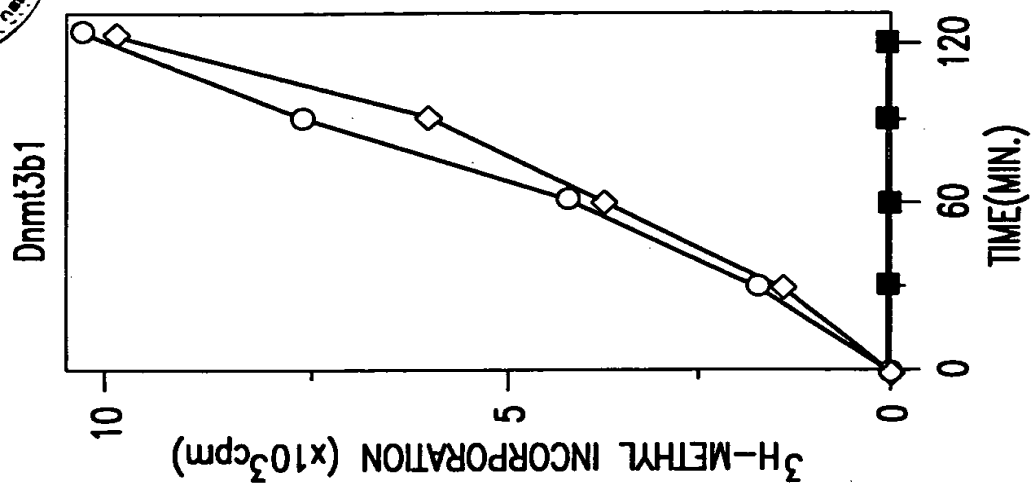


FIG. 8C

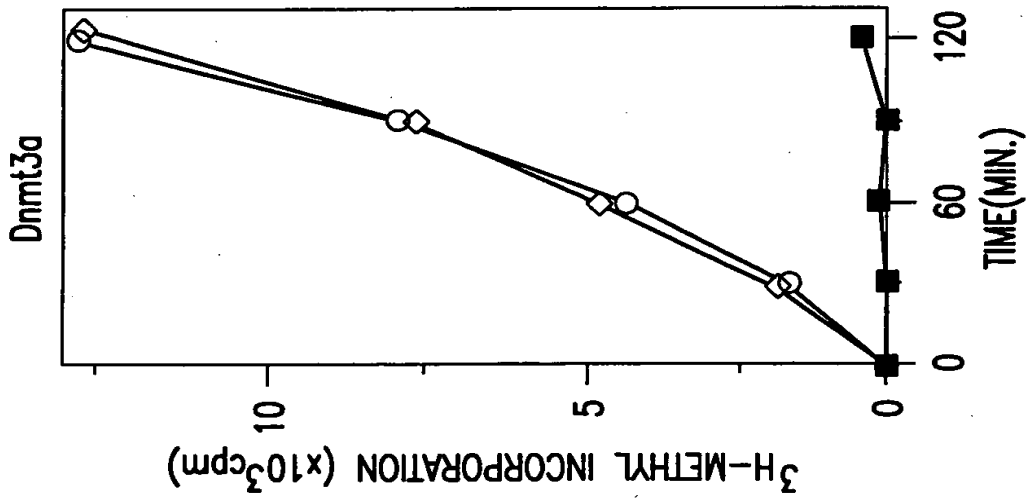


FIG. 8B

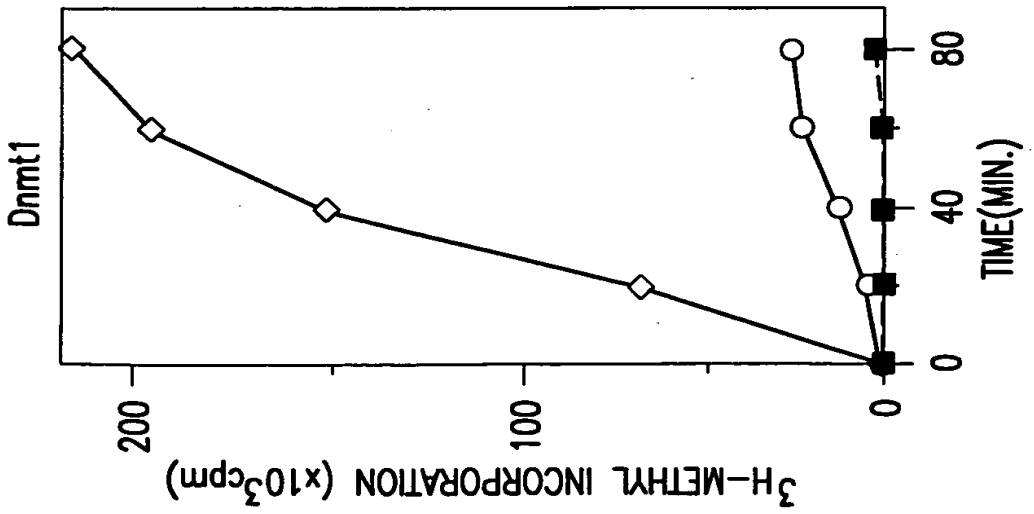


FIG. 8A

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
Inventors: Li et al.; Tel: 202/371-2600
Title: *De Novo* DNA Cytosine Methyltransferase Genes, Polypeptides and Uses Thereof

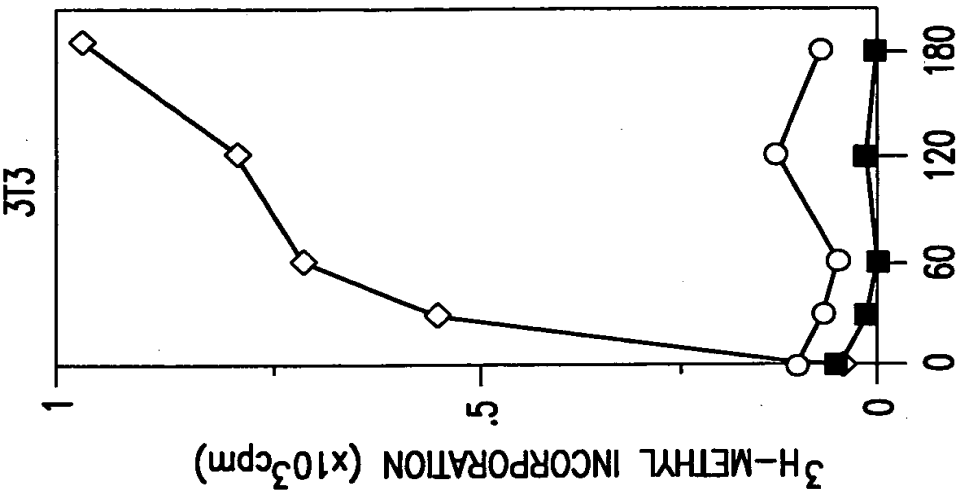


FIG. 8E

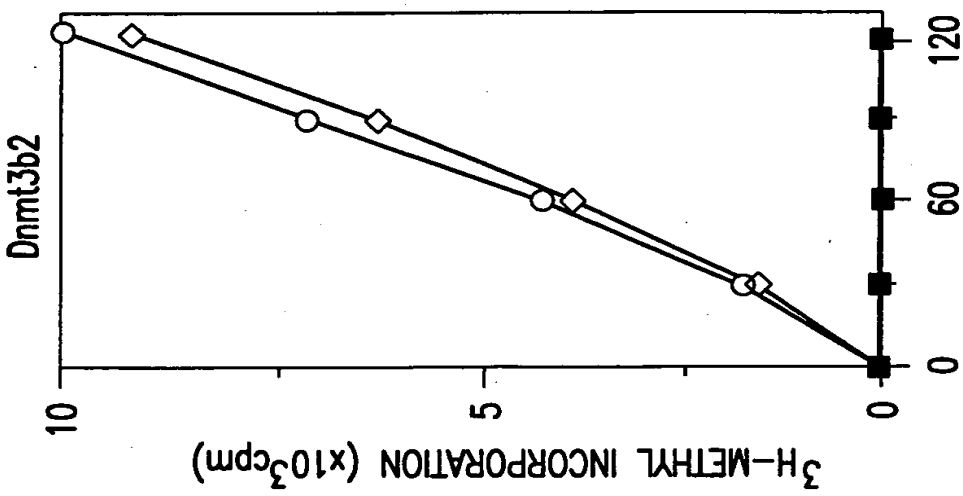
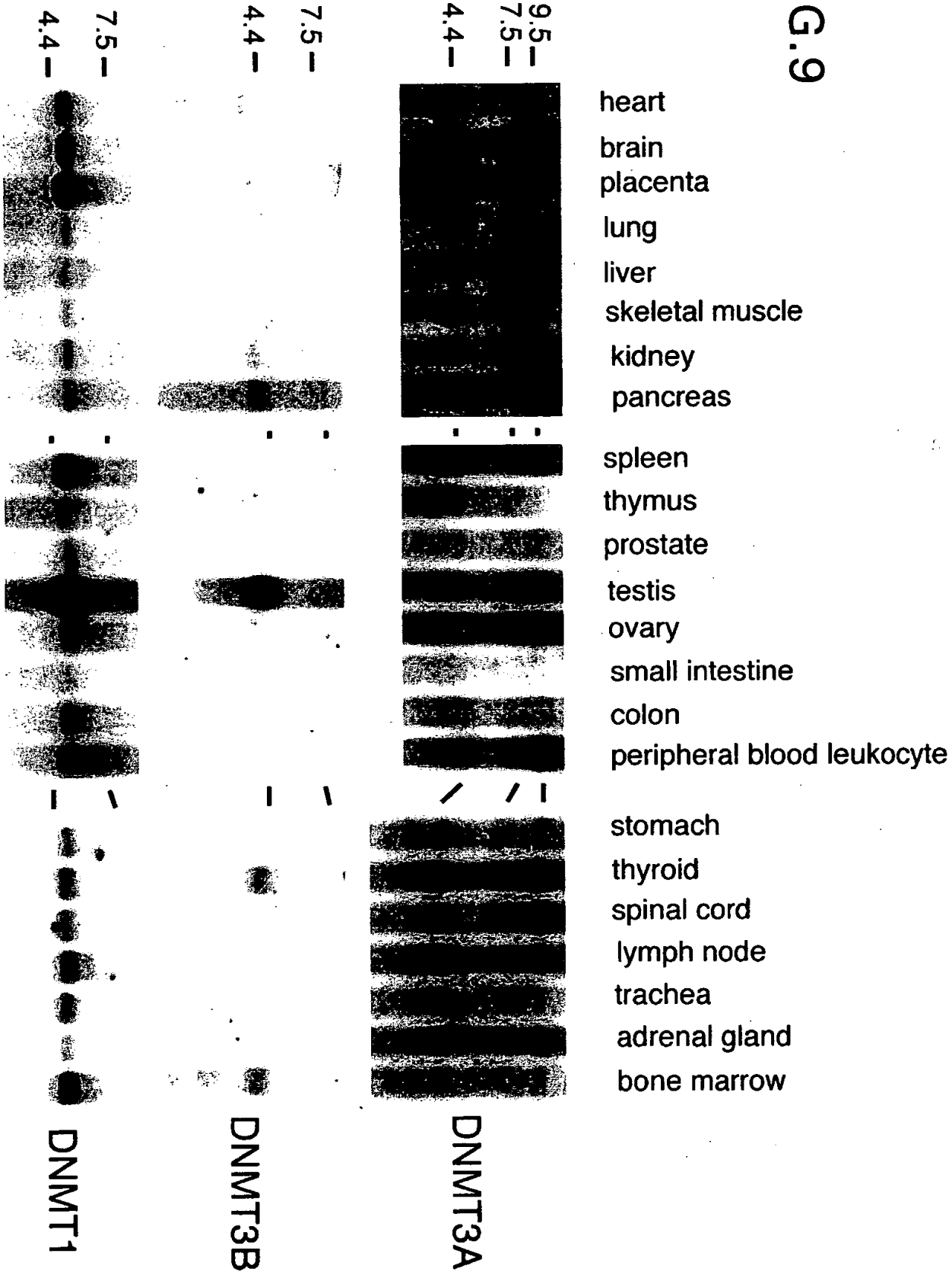


FIG. 8D

FIG.9


9.5
7.5
4.4
heart
brain
placenta
lung
liver
skeletal muscle
kidney
pancreas
spleen
thymus
prostate
testis
ovary
small intestine
colon
peripheral blood leukocyte
stomach
thyroid
spinal cord
lymph node
trachea
adrenal gland
bone marrow
DNMT3A
DNMT3B
DNMT1

Appl. No. 09/720,086; 102(e): July 23, 2001
Dkt. No. 0609.4560002/JAG/KRM/DJN; Group Art Unit: 1642
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